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DOCUMENT-IDENTIFIER: US 20020146950 A1

TITLE: Antimicrobial materials

Series Code and Application Number (1):
09/837739Summary of Invention Paragraph (5):

[0003] Animals possess a keen sense of smell which enables them to recognize body odors emanating from humans, as well as other odors associated with humans. This poses not only a problem to big game hunters, as the odors warn the animals of an approaching human, but also creates a hazard to humans, wherein carnivorous predators may correlate the presence of human body odors, and those odors associated with humans, as evidence that human prey is in the vicinity. Traditionally, various fabrics and apparel systems, as well as methods of forming compositions and yarns, have been developed which, for example, prevent, mask or absorb body odors. These include, for example, applying a topical antimicrobial or deodorizing agent onto an already formed fabric to inhibit the production of body odors; designing apparel with a plurality of layers, wherein an intermediate layer contains activated charcoal; and manufacturing fabrics composed of untreated and treated layers, wherein an antimicrobial agent migrates from the treated layer to the untreated layer, thereby preventing microbial growth and subsequent generation of body odors.

Summary of Invention Paragraph (9):

[0007] U.S. Pat. No. 4,343,853 relates to a fabric construction having a backing fabric and a face fabric. At least one of the fabrics is made at least in part of yarns formed from synthetic fibers which have incorporated thereunto an antimicrobial agent. In some embodiments a tie yam joins the two faces in plated relation. Even with minimal contact of the yarns in the two fabrics, the antimicrobial agent migrates from within the treated fibers in the one fabric to the surface thereof and transfers to the yams in the other fabric. Thus, it is purported that there is imparted antimicrobial protection to both fabric faces while maintaining the advantages of naturally occurring, untreated fibers in one of the fabrics.

Summary of Invention Paragraph (13):

[0011] U.S. Pat. No. 5,856,048 relates to cellulose fibers and products comprising treated fibers to absorb body secretions and to substantially decrease microbial growth, the fibers being chemically treated with a water soluble salt of a transition metal and an alkali and after this with a solution of a bisbiguanide compound, forming a bond between the fibers, the transition metal and the bisbiguanide. Preferred are water-soluble cupric salts as a suitable hydroxide. A preferred bisbiguanide is chlorhexidine. The products purportedly can be yarns, knitted, woven, non-woven fabrics, paper gauze and especially bandages, wound dressings, pads, diapers, sanitary napkins, tampons, bed sheets, pants, garments, towels, socks, shoe linings and underwear. Preferably between 0.1 to 3.0 weight per cent copper calculated on the cellulose is bonded to the cellulose.

Summary of Invention Paragraph (17):

[0015] U.S. Pat. No. 5,856,005 relates to a permanently flame-retardant and anti-microbial air-textured yarn formed of a plurality of substantially

longitudinally extending, permanently flame-retardant filaments defining a core, and a plurality of substantially randomly extending, permanently anti-microbial filaments disposed at least about the core, the anti-microbial filaments at least partially defining a boucle-like sheath about the core. A knit or woven fabric formed with the yarn and having at least 5% by weight of the anti-microbial filaments characterized by an ability to pass, both after one commercial laundering and after 100 commercial launderings, both National Fire Protection Agency vertical flame retardancy test NFPA 701-1989 and at least the 85% reduction level of gram positive and gram negative bacteria of anti-microbial test NYS '63.

Detail Description Paragraph (7):

[0078] The materials of the present invention, and the, for example, garments, apparel and articles of clothing made therefrom, achieve odor-adsorption, odor-prevention and prevention of odor detection by animals through the use of at least one polyester fiber and at least one acetate fiber, wherein the acetate fiber is comprised of at least one antimicrobial agent. Examples of polyester fibers include those manufactured by DuPont, Wellman, Nanya, Kosa and Universal. Further, a skilled artisan would understand that polyester fibers known as "commodity yarns" in the market may also be used. Polyester is advantageous because of its durability, the fact that it dyes well and also takes on color for both pigment and sublimatic printing desirable in the camouflage market. Polyester fibers include, for example, those with a range of about 70-300 denier; single strand or plied; and conventional or microdenier. Preferred polyester fibers include a 150 denier 68 filament and/or a 55 denier 20 filament. In these preferred polyester fibers, the polyester is semi-dull round disperse dyeable. "Semi-dull round" is preferred because it provides the fabric with a non-light-reflective property favored by hunters. "Disperse dyeable" is preferred because the polyester fiber will accept the full range of colors desirable when printing a camouflage pattern. Preferably, the concentration of the polyester fiber is about 75% by weight of the total fabric.

112/1st
18th 2nd fibers
doesn't
describe
antimicrobial yarn comprising